



NATIONAL OCCUPATIONAL STANDARD FOR GENERAL BRICKLAYER

Disclaimer: this document is for NOS Development Team Discussions only.
It should not be used, or referred to, as a National Occupational Standard

APPROVING AUTHORITY

This National Occupational Standard has been prepared and published under the authority of the Zambia Qualifications Authority Board on 25th February 2021.

ZAMBIA QUALIFICATIONS AUTHORITY

The Zambia Qualifications Authority Act No. 13 of 2011 was enacted by the Government of the Republic of Zambia to ***“provide for the development and implementation of a national qualifications framework; establish the Zambia Qualifications Authority; provide measures to ensure that standards and registered qualifications are internationally comparable; and provide for matters connected with, or incidental to the foregoing”***. Among other functions, ZAQA is responsible for ***determining national standards for any occupation***, through various sector specific National Occupational Standards Development Teams (NOSDTs).

REVISION OF NATIONAL OCCUPATIONAL STANDARDS

National Occupational Standards shall be revised every after **5 years**, or whenever necessary, by the issue of either amendments or of revised editions. It is important that users of National Occupational Standards (NOS) should ascertain that they are in possession of the latest amendments or editions.

NOS DEVELOPMENT TEAM RESPONSIBLE

This National Occupational Standard was prepared by the Construction National Occupational Standards Development Team, upon which the following organisations were represented:

1. Association of Building and Civil Engineering Contractors
2. Association of Consulting Engineers of Zambia
3. Copperbelt University
4. Department of Public Infrastructure
5. Engineering Institution of Zambia
6. Ministry of Housing and Infrastructure Development
7. National Council for Construction
8. Road Development Agency
9. Surveyors Institute of Zambia
10. Technical Education, Vocational and Entrepreneurship Training Authority
11. Thorn Park Construction Training Centre
12. University of Zambia
13. Zambia Institute of Architects
14. Zambia Qualifications Authority – Secretariat
15. Zesco Limited

ACKNOWLEDGEMENT

The Zambia Qualifications Authority would like to acknowledge the invaluable support of the following stakeholders that participated in the development of this National Occupational Standard:

1. Arch. Mofya Kumisuku (Zambia Institute of Architects)
2. Arch. Chance Kaonga (National Council for Construction)
3. Arch. Mweene Musanu (Ministry of Housing and Infrastructure Development)
4. Dr. Erastus Mishengú Mwanaumo (University of Zambia)
5. Dr. Ephraim Zulu (Copperbelt University)
6. Eng. Jozef Breza (Association of Building and Civil Engineering Contractors)
7. Eng. Gomezyani Mwaba (Association of Consulting Engineers of Zambia)
8. Eng. Angus Ngoshe (Department of Public Infrastructure)
9. Eng. Duncan Lungu (Zesco Limited)
10. Eng. Joseph M. Goma (Road Development Agency)
11. Eng. Francis Xavier Mwape (Engineering Institution of Zambia)
12. Eng. Patrick Tembo (Technical Education, Vocational and Entrepreneurship Training Authority)
13. Mrs. Chileshe Patricia Mulenga (Individual Expert)
14. Mr. Saboi Mwalusi (Thorn Park Construction Training Centre)
15. Mr. Michael Chileshe (Surveyors Institute of Zambia)
16. Mr. Fidelis Cheelo (Zambia Qualifications Authority)
17. Mr. James Mwewa (Zambia Qualifications Authority)

TABLE OF CONTENTS

FOREWORD	iv
JUSTIFICATION	iv
ACRONYMS AND ABBREVIATIONS	v
GLOSSARY OF TERMS	vi
1. OVERVIEW	1
2. SCOPE	2
3. PERSONAL ATTRIBUTES (VALUES, ETHICS AND ATTITUDES).....	2
4. UNITS AND ELEMENTS	2
5. EQUIPMENT, TOOLS AND CONSUMABLE MATERIALS	32
6. DILEMMAS/CHALLENGES AND COMPLEXITIES FOR A JOB HOLDER	32
7. WORKING CONDITIONS/ENVIRONMENT	33
8. PARTIES INVOLVED/INTERACTING WITH THE JOB HOLDER OR TRAINEE 33	
9. PHYSICAL DEMANDS ON THE BODY	33
ANNEX A	33
ANNEX B	35

FOREWORD

The Zambia Qualifications Authority (ZAQA) is a statutory body under the Ministry of Higher Education established by ZAQA Act No. 13 of 2011 to ***“provide for the development and implementation of a national qualifications framework; provide measures to ensure that standards and registered qualifications are internationally comparable; and provide for matters connected with, or incidental to the foregoing”***.

Among other functions, ZAQA is responsible for *“determining national standards for any occupation”*, through various sector specific National Occupational Standards Development Teams (NOSDTs) of experts composed of representation from appropriate authorities, government departments, industry, academia, regulators, consumer associations and non-governmental organisations, etc.

This National Occupational Standard (NOS) has been developed by the Construction National Occupational Standards Development Team in accordance with the procedures and guidelines of ZAQA. All users should ensure that they have the latest edition of this publication as National Occupational Standards are revised from time to time.

This NOS shall be used by, among others, industry, employers, quality assurance bodies, awarding and professional bodies and education and training institutions, as a benchmark to identify training needs, develop job profiles/descriptions, develop curricula and learning programmes, in various sectors where the occupation exists. In the Construction sector, demonstration of competence against this NOS may be required in order to run a business or practice a craft or profession.

JUSTIFICATION

The Construction sector is one of the booming sectors in Zambia. The sector is central to delivering the homes and schools, hospitals, agriculture, manufacturing, transport and energy infrastructure that our society demands. General Bricklayers is one of the core functions in Construction and an indispensable occupation within the sector. A General Bricklayer is responsible for laying and binding building materials, such as bricks, structural tiles, concrete blocks, cinder blocks, glass blocks, and terra-cotta blocks, with mortar and other substances to construct or repair walls, partitions, arches, sewers, and other structures.

It is important that General Bricklayers are equipped with the necessary knowledge and skills to be able to read blueprints or plans, mix construction materials in the correct proportions, understanding building code requirements and using safety practices. They must also have a solid grasp of general construction materials, tools and processes. They should keep up-to-date with current construction/building technologies and general latest developments in the sector, such as environmentally friendly buildings and smart cities.

This National Occupational Standard highlights core knowledge, skills, competences and personal attributes that General Bricklayers must possess to be successful in their jobs.

ACRONYMS AND ABBREVIATIONS

CS	Core Skill
GB	General Bricklayer
NOS	National Occupational Standard
NOSDT	National Occupational Standards Development Team
OK	Organisational Knowledge
PC	Performance Criteria
PS	Professional Skill
RPL	Recognition of Prior Learning
TK	Technical Knowledge
ZAQA	Zambia Qualifications Authority
ZQF	Zambia Qualifications Framework

GLOSSARY OF TERMS

For the purposes of this NOS, the following terms and definitions shall apply:

Core Skills/Generic Skills: are a group of skills that are key to learning and working in today's world. These skills are typically needed in any work environment. In the context of the NOS, these include communication related skills that are applicable to most job roles.

Function: is an activity necessary for achieving the key purpose of the sector, occupation, or area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of NOS.

Job Title: defines a unique set of functions that together form a unique employment opportunity in an organisation.

Knowledge and Understanding: are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.

National Occupational Standards (NOS): are statements of the standards of performance individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding. They are precise descriptions of what an individual is expected to be able to do in his/her work role.

National Occupational Standards (NOS) Code: is a unique reference code that identifies a NOS.

National Occupational Standards Development Team (NOSDT): means an established group of national stakeholders/experts responsible for the development of National Occupational Standards within a specific economic sector or occupation.

Occupation: is a set of job roles, which perform similar/related set of functions in an industry.

Organisational Context: includes the way the organisation is structured and how it operates, including the extent of operative knowledge that managers have in their relevant areas of responsibility.

Performance Criteria: are statements that together specify the standard of performance required when carrying out a task.

Scope: is the set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on the quality of performance required.

Sector: is a conglomeration of different business operations having similar businesses and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.

Sub Sector: is derived from a further breakdown based on the characteristics and interests of its components.

Technical Knowledge: is the specific knowledge needed to accomplish specific designated responsibilities.

Unit Title: gives a clear overall statement about what the incumbent should be able to do.

1. OVERVIEW

This is an introductory section providing a brief summary and specific information or commentary about the content of the NOS and the targeted sector and occupation to help the user judge whether it is relevant to them.

NOS Code	NOS.GB.01
Occupation	Bricklaying and Plastering
Job Title	General Bricklayer
Job Description	The General bricklayer performs routine bricklaying works including brickwork, blockwork, laying paver blocks, plastering, cementitious waterproofing, rubble masonry and flooring works and should also be able to set out simple buildings
Job Purpose	The Bricklayer is responsible for performing routine bricklaying works
ZQF Level	4
Sector	Construction
Sub sector	Infrastructure Construction
Other Economic Sector(s) in which the Occupation is Practiced	Education, Real Estate, Health, Mining, Manufacturing, Energy, Telecommunication, etc.
Other Similar Jobs that can be Performed in the Occupation	Supervisor Bricklayer, Assistant Bricklayer, Helper Bricklayer, Tilling Bricklayer, Concrete Bricklayer, Builder, Bricklayer, Concrete Finisher, etc.
Minimum Educational Job Entry Qualification(s)	ZQF Level 2B
Practicing License Requirements (if any)	Non Applicable (Membership to Professional Body)
Training/RPL (Suggested)	1. Non trained worker: 3 years site experience attached to bricklaying activities occupation 2. 5S Workplace Organisation Method.
Minimum Job Entry Age	18 years
Prior Experience (Recommended)	1. Non trained worker: 5 years site experience in the same occupation 2. Trained worker: 2 years Bricklaying experience as a certified Assistant Bricklayer
Performance Criteria	As described in the Units under Section 4

2. SCOPE

This National Occupational Standard highlights core knowledge, skills, competences and personal attributes that General Bricklayers must possess to be successful in their jobs.

3. PERSONAL ATTRIBUTES (VALUES, ETHICS AND ATTITUDES)

The job requires the individual to have:

Dependability: being reliable, responsible, and dependable, and fulfilling obligations.

Cooperation: being pleasant with others on the job and displaying a good-natured, cooperative attitude.

Integrity: being honest and ethical.

Adaptability/Flexibility: being open to change (positive or negative) and to considerable variety in the workplace.

Achievement/Effort: establishing and maintaining personally challenging achievement goals and exerting effort toward mastering tasks.

Analytical Thinking: analysing information and using logic to address work-related issues and problems.

Leadership: willingness to lead, take charge, and offer opinions and direction.

Self-Control: maintaining composure, keeping emotions in check, controlling anger, and avoiding aggressive behaviour, even in very difficult situations.

Concern for Others: being sensitive to others' needs and feelings and being understanding and helpful on the job.

Time-management skills: must be able to effectively plan their time and their team members' time on the job.

In addition to the above attributes, General Bricklayers should have good communication skills, physical stamina, problem-solving skills, visualization skills and attention to detail, among other attributes.

4. UNITS AND ELEMENTS

This National Occupational Standard is divided into 8 Units representing the tasks that a job holder should undertake in his/her day to day work. Each unit is further broken down into elements depicting the number of activities to be carried out for the successful execution of a particular task.

UNIT 1 [This Unit covers the skills and knowledge required by a General Bricklayer to be proficient in constructing various structures using bricks or blocks].

Unit No.	01
Unit Title	Construct structures using bricks or blocks
Description	This Unit describes the skills and knowledge required to construct various structures using bricks or blocks
Scope	<p>This Unit covers the following:</p> <ul style="list-style-type: none"> • Carry out preparatory work before starting work • Set out basic building structures • Check materials to be used for brickwork or blockwork • Lay bricks or blocks to construct walls, columns and footings • Check the line, level and alignment of brick work • Carry out pointing in bricks • Perform specialised brick works such as arches, staircases, manholes and walkways • Repair and restore brick or blockwork • Lay floor and wall tiles
Performance Criteria (PC) based on the Scope	
Element	Performance Criteria (PC)
Carry out preparatory work before starting brick work	<p>To be competent, the individual must be able to:</p> <p>PC1. read and interpret working drawings, details or sketches before the commencement of brickwork or blockwork</p> <p>PC2. ensure that tools are in good working condition</p> <p>PC3. check for adequate roughness or wetting of the surface</p> <p>PC4. identify and level out surfaces using appropriate tools</p>
Set out basic building structures	<p>To be competent, the individual must be able to:</p> <p>PC5. set out basic buildings structures as per drawings or instructions</p> <p>PC6. identify the datum line for the building site</p> <p>PC7. set out right angles using the builders square or the 3-4-5 triangle</p> <p>PC8. install profile boards and pegs at appropriate corners of a building</p> <p>PC9. check the building set out</p> <p>PC10. Mark the position of trenches and walls from the profile boards or pegs</p>
Check materials to be used for brickwork or blockwork	<p>To be competent, the individual must be able to:</p> <p>PC11. conduct visual checks for quality of bricks, blocks and other construction materials prior to use</p> <p>PC12. ensure that fine aggregate quality is appropriate</p> <p>PC13. ensure bricks or blocks are soaked prior to use</p>
Lay bricks or blocks to construct walls, columns and footings	<p>To be competent, the individual must be able to:</p> <p>PC14. select appropriate tools and equipment for the tasks to be carried out such as:</p> <ul style="list-style-type: none"> • different types of trowels (of the right blade size) • builders square • measuring tape • levelling tools

	<ul style="list-style-type: none"> • bricklayer's hammer • blocking chisel • mashing hammer • jointers • Floaters <p>PC15. Cut bricks or blocks to required shape and size using appropriate tools</p> <p>PC16. estimate the quantities of brickwork related construction materials required</p> <p>PC17. lay bricks or blocks as per specifications within the standard tolerance limits using appropriate mortar or adhesive</p> <p>PC18. ensure that the rise of brickwork or blockwork is in line and levelled</p> <p>PC19. ensure proper curing of constructed brickwork structure</p>
<p>Check the line, level and alignment of brickwork</p>	<p>To be competent, the individual must be able to:</p> <p>PC20. maintain the required level and specified slope for the brickwork structure</p> <p>PC21. check vertical and horizontal alignment of the brickwork structure using appropriate tools</p> <p>PC22. maintain line and level of each course of brick or block work using straight edge sections</p> <p>PC23. set out 90° corners using builders square or 3-4-5 method and check the right angle</p>
<p>Carry out pointing in brickwork</p>	<p>To be competent, the individual must be able to:</p> <p>PC24. ensure that joints are consistent and correct in size</p> <p>PC25. perform raking of joints as specified prior to drying of bonding mortar</p> <p>PC26. ensure that joints are cleaned and surface is wet prior to pointing</p> <p>PC27. ensure lime or cement mortar for pointing is prepared as per specification</p> <p>PC28. fill joints with appropriate mortar to obtain specified type of pointing</p> <p>PC29. carry out various types of pointing works as per specification using appropriate tools and technique</p> <p>PC30. ensure proper curing of pointing</p>
<p>Perform specialised brickwork such as arches, staircases, manholes and walkways</p>	<p>To be competent, the individual must be able to:</p> <p>PC31. maintain set out of tread and riser of staircase as per drawing/instruction</p> <p>PC32. maintain brickworks as per required bond, alignment and plumb</p> <p>PC33. maintain bricks or blocks for manholes as per required line and level as well as providing channels and benching</p> <p>PC34. lay and fix paver blocks to designed pattern and finish the joints as specified</p> <p>PC35. install anchors and ties for brick arches</p> <p>PC36. install arch brick units by laying and aligning as per specified bond</p> <p>PC37. cut creepers around corners and full joints to obtain a flushed structure</p>

	PC38. ensure proper curing of constructed brickwork structure
Repair and restore brick or blockwork	To be competent, the individual must be able to: PC39. remove deteriorated elements from brick structures using tools such as saws, drills and chisels without causing damage to adjacent structure PC40. reinstall bricks or blocks to match previous or existing work PC41. perform proper pointing and raking of joints to obtain desired surface for exposed brickwork PC42. ensure proper bonding between old and new surfaces of brickwork PC43. repair cracks in walls by scrapping off loose mortar, and bricks, installing reinforcement across the crack, replacing bricks and grouting the cracks
Tiling floors and walls	To be competent, the individual must be able to: PC44. prepare surface to be tiled by cleaning dust and debris PC45. measure to find the center of the room, and snap two chalk lines that intersect exactly in the centre of the floor PC46. do a dry run before laying the tiles, laying out the tiles and the spacers to determine where to start the tiling process and help determine the width of the grout lines PC47. work on one section of the floor in small sections to keep the mortar from drying before the tile is in position. PC48. use a notched trowel to obtain an even layer of mortar work. PC49. mark and make cuts with a standard tile cutter PC50. using the chalk line as a guide and placing spacers between each tile to ensure uniform distance between the tiles PC51. use a rubber trowel or float to spread grout across the tiles at an angle to be certain to get it between each tile and wipe away the excess with a damp sponge or cloth
Knowledge and Understanding (K)	
A. Organisational Context (Knowledge of the company/ organisation and its processes)	The individual on the job must demonstrate knowledge and understanding of: OK1. standard practices for brickwork OK2. safety rules and regulations for handling and storing required bricklaying tools, equipment and materials OK3. personal protection including the use of related safety gear and equipment OK4. how to request for tools and materials as per set procedures OK5. maintenance of bricklaying tools and equipment
B. Technical Knowledge	The individual on the job must demonstrate knowledge and understanding of: TK1. sketches for building brick and blockwork structures TK2. basic principles of measurement of items related to brickwork TK3. standard specifications for all bricklaying tools and equipment, their care and maintenance TK4. knowledge of raw materials TK5. knowledge of brick bonds TK6. how to use basic levelling tools in bricklaying works such as spirit level, water level, plumb bob and line thread

	<p>TK7. how to select and use tools and equipment such as measuring tape, trowels, floats, brushes, screed boards, straightedge, concrete mixer, mortar boards and stands, shovels, wheelbarrows, hawks, joint rules, bricklayer's square, buckets, power leads, spade, volume box and water measuring jug</p> <p>TK8. how to determine vertical and horizontal alignment using appropriate tools to provide vertical datum lines for building measurements</p> <p>TK9. how to use the 3-4-5 method for squaring corners</p> <p>TK10. various techniques and procedures for cutting, chiselling and dressing different types of bricks to closure</p> <p>TK11. how to lay and fix bricks or blocks in position</p> <p>TK12. knowledge of size of girth and joints</p> <p>TK13. various cement mix proportions and their importance</p> <p>TK14. various adhesives used in brick or blockwork</p> <p>TK15. basic knowledge of water to cement ratio</p> <p>TK16. methods of curing brickwork structures</p> <p>TK17. arch components and terminology</p> <p>TK18. importance of proper joint spacing and gauging in arches</p> <p>TK19. techniques for repairing and finishing brickwork structures</p> <p>TK20. various types of pointing in brickwork and their application including;</p> <ul style="list-style-type: none"> • flush pointing • keyed/grooved pointing • recessed pointing • struck pointing <p>TK21. different mortar mixes used for pointing</p> <p>TK22. various pointing and raking tools and techniques and method of pointing a joint as per specification</p> <p>TK23. principles of setting out building works such as working from the whole to the part</p>
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	<p>The individual on the job must be able to:</p> <p>CS1. write in English (at least working level) and be able to or have the means to give simple instructions in the local language used at the site</p>
	Reading Skills
	<p>The individual on the job must be able to:</p> <p>CS2. read in English (at least working level)</p> <p>CS3. read sketches provided by the supervisor, if required</p> <p>CS4. read instructions, guidelines, sign boards, safety rules and safety tags</p> <p>CS5. read instructions and identify exit routes during emergencies</p>
	Oral Communication (Listening and Speaking skills)
	<p>The individual on the job must be able to:</p> <p>CS6. speak in English (at least working level) and be able to or have the means to give simple instructions in the local language used at the site</p>

	<p>CS7. listen attentively and follow instructions given by the supervisor CS8. orally and effectively communicate with co-workers and subordinates</p>
<p>B. Professional Skills</p>	<p>Decision Making</p>
	<p>The individual on the job must be able to: PS1. decide whether the work place is safe for working PS2. decide whether work front is clear and adequate materials and tools are available for performing work</p>
	<p>Plan and Organise</p>
	<p>The individual on the job must be able to: PS3. plan work and organise required resources in coordination with team members and superiors PS4. prioritise daily works according to the construction project requirements</p>
	<p>Customer Centricity</p>
	<p>The individual on the job must be able to: PS5. focus on meeting and satisfying the needs of the client</p>
	<p>Problem Solving</p>
	<p>The individual on the job must be able to: PS6. rectify anything wrong with brickwork materials PS7. rectify any wrong setting or alignment of brickwork structure PS8. resolve any conflicts within the team</p>
	<p>Analytical Thinking</p>
	<p>The individual on the job must be able to: PS9. optimise the use of resources PS10. assess quantity and quality of brickwork materials for the day's work PS11. minimise wastage of construction materials in the workplace PS12. assess the amount of brickwork to be done on a daily basis PS13. reconcile daily material consumption</p>
<p>Critical Thinking</p>	
<p>The individual on the job must be able to: PS14. evaluate the complexity of the task and seek assistance and support wherever required PS15. assess any requirements for requisite materials and resources PS16. critically evaluate the quality of scaffolding or working platform against all aspects of safety PS17. evaluate violations of any safety norms which may lead to accidents in the workplace</p>	

UNIT 2 [This Unit covers the skills and knowledge required by a General Bricklayer to be proficient in plastering on internal and external surfaces of brickwork and Cement Concrete (RCC) structures].

Unit No.	02
Unit Title	Apply plaster on internal and external surfaces of Brickwork and Concrete structures
Description	This Unit describes the skills and knowledge required to plaster on internal and external surfaces of brickwork and Concrete structures
Scope	<p>This Unit covers the following:</p> <ul style="list-style-type: none"> • Carry out preparatory work before starting the plastering work including levelling • Check materials to be used for plastering • Plaster internal and external brickwork and concrete structures • Plaster reveals and margins • Skim walls with gypsum plaster • Fit door frames and window units in openings • Check for line, level and alignment of the plaster
Performance Criteria (PC) based on the Scope	
Element	Performance Criteria (PC)
Carry out preparatory work before starting the plastering work	<p>To be competent, the individual must be able to:</p> <p>PC1. read sketches for plastering work</p> <p>PC2. select correct materials, tools, trestles and equipment to be used, handle and store them properly at the workplace</p> <p>PC3. ensure that surface receiving plaster is prepared appropriately</p> <p>PC4. produce appropriate levels/thickness and make any grooves or lines on the surface as instructed</p>
Check materials to be used for plastering	<p>To be competent, the individual must be able to:</p> <p>PC5. check for quality and consistency of fine aggregate materials</p> <p>PC6. ensure sieving of fine aggregates as per grade requirement</p> <p>PC7. check the quality of surface to be plastered</p> <p>PC8. check for quality and consistency of cement mortar mix</p>
Apply plaster to internal and external brickwork and cement concrete structures	<p>To be competent, the individual must be able to:</p> <p>PC9. read a metric measuring tape and use spirit levels to find the vertical and horizontal planes.</p> <p>PC10. understand ratios and accurately mix the components to make a suitable plastering mix.</p> <p>PC11. ensure that correct tools and equipment are selected for plastering work as per requirement</p> <p>PC12. moisten surface sufficiently before starting of the plastering work</p> <p>PC13. ensure that cement mortar is mixed in specified proportion including addition of additives if necessary</p> <p>PC14. apply cement slurry on receiving surface uniformly</p> <p>PC15. apply the plastering mix of specified thickness on the surface</p> <p>PC16. finish the surface by using correct tools as per the required finish</p>

	<p>PC17. check for horizontal and vertical alignment during and after plastering</p> <p>PC18. do all the aftercare work to ensure rendering cures properly</p>
Apply plaster to internal and external reveals and margins	<p>To be competent, the individual must be able to:</p> <p>PC19. create reveals, bands, bell casts, plinths and ashlar finishes.</p> <p>PC20. render to vertical and horizontal margins of reveals</p>
Skimming walls with gypsum plaster	<p>To be competent, the individual must be able to:</p> <p>PC21. fix gypsum plaster to the correct consistency in accordance with the manufacturer's instructions</p> <p>PC22. prepare the surface by cleaning off any dust, oil and the like in readiness to receive the gypsum plaster</p> <p>PC23. apply gypsum plaster to the wall and trowel the surface progressively to get a smooth matt finish</p> <p>PC24. fix various beads</p> <p>PC25. fix corner strips and coves</p>
Window unit/door frame installation	<p>To be competent, the individual must be able to:</p> <p>PC26. install window units to wall jambs</p> <p>PC27. insure that window unit and door frame are positioned in place so that the head and sill are level and plumb</p>
Check for line, level and alignment of the structure	<p>To be competent, the individual must be able to:</p> <p>PC28. check for vertical and horizontal alignment using appropriate tools</p> <p>PC29. check for right angle at corners if required</p>
Knowledge and Understanding (K)	
A. Organisational Context (Knowledge of the company/ organisation and its processes)	<p>The individual on the job must demonstrate knowledge and understanding of:</p> <p>OK1. standard practices for plastering work</p> <p>OK2. safety rules and regulations for handling and storing required bricklaying tools, equipment and materials</p> <p>OK3. personal protection including the use of related safety gear and equipment</p> <p>OK4. how to request for tools and materials as per set procedures</p> <p>OK5. maintenance of tools and equipment for plastering</p>
B. Technical Knowledge	<p>The individual on the job must demonstrate knowledge and understanding of:</p> <p>TK1. sketches for all plastering work</p> <p>TK2. basic principles of measurement of materials for plastering</p> <p>TK3. standard specifications for all plastering tools and equipment, their care and maintenance</p> <p>TK4. how to use basic levelling tools in plastering works such as spirit level, water level, plumb bob and line thread</p> <p>TK5. how to select and use tools and equipment such as:</p> <ul style="list-style-type: none"> • finishing trowel, plastering corner trowel, plastering trowels, pre-worn permashape, etc. • plasters hawk, plastering float, plastering feather edges, plastering derbies • plastering joint knives and spreaders, plastering sanders and sheets

	<ul style="list-style-type: none"> measuring tape/rule, floats, brushes, straight edge, shovels, wheelbarrows, hawks, builders square, buckets, spade, volume box and measuring can <p>TK6. gradation of sand for internal plasters TK7. how to continuously monitor the alignment of the plastering on the brick/block work using levelling tools TK8. different types of plasters such as sand faced plaster, rough cast plaster, pebbled cast plaster, and smooth cast plaster TK9. methods and techniques for plastering internal and external brickwork and cement concrete structures TK10. various mix proportions to be used and thickness of plastering to be done on internal and external surfaces</p>
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	The individual on the job must be able to: CS1. write in English (at least working level) and be able to or have the means to give simple instructions in the local language used at the site
	Reading Skills
	The individual on the job must be able to: CS2. read in English (at least working level) CS3. read sketches provided by the supervisor, if required CS4. read instructions, guidelines, sign boards, safety rules and safety tags CS5. read instructions and identify exit routes during emergencies
	Oral Communication (Listening and Speaking skills)
	The individual on the job must be able to: CS6. speak in English (at least working level) and be able to or have the means to give simple instructions in the local language used at the site CS7. listen attentively and follow instructions given by the supervisor CS8. orally and effectively communicate with co-workers and subordinates
B. Professional Skills	Decision Making
	The individual on the job must be able to: PS1. decide whether the work place is safe for working PS2. decide whether work front is clear and adequate materials and tools are available for performing work
	Plan and Organise
	The individual on the job must be able to: PS3. plan work and organise required resources in coordination with team members and superiors PS4. prioritise daily works as per the construction project requirements
	Customer Centricity
	The individual on the job must be able to: PS5. focus on meeting and satisfying the needs of the client

	Problem Solving
	The individual on the job must be able to: PS6. rectify anything wrong with the plastering materials PS7. rectify anything wrong with the setting or alignment of all plastering work PS8. resolve any conflicts within the team
	Analytical Thinking
	The individual on the job must be able to: PS9. optimise the use of resources PS10. use resources efficiently PS12. minimise wastage of construction materials at the workplace PS13. assess quantity and quality of materials for the day's work PS14. assess the amount of plasterwork to be done on a daily basis PS15. reconcile daily material consumption
	Critical Thinking
	The individual on the job must be able to: PS16. evaluate the complexity of the task and seek assistance and support wherever required PS17. assess any requirements for requisite materials and resources PS18. Critically evaluate the quality of scaffolding or working platform against all aspects of safety PS19. evaluate violations of any safety norms which may lead to accidents in the workplace

UNIT 3 [This Unit covers the skills and knowledge required by a General Bricklayer to be proficient in carrying out waterproofing work on structures using cementitious materials at the construction site].

Unit No.	03
Unit Title	Carry out waterproofing work on structures using cementitious materials
Description	This Unit describes the skills and knowledge required to carry out work for the waterproofing of structures using cementitious materials
Scope	<p>This Unit covers the following:</p> <ul style="list-style-type: none"> • Carry out preparatory work prior to waterproofing including cleaning the surface thoroughly free of loose particles, dirt and ensure that there are no oil traces • Check the materials to be used for waterproofing • Lay out waterproofing course • Carry out cementitious waterproofing including brick bat coba waterproofing • Check for line, level and alignment of the structure
Performance Criteria (PC) to the Scope	
Element	Performance Criteria (PC)
Carry out preparatory work prior to waterproofing	<p>To be competent, the individual must be able to:</p> <p>PC1. identify and correct defects including caulking by sealing joints or seams in various concrete structures</p> <p>PC2. clean and wash the surface to be water proofed</p> <p>PC3. ensure bricks are adequately soaked prior to waterproofing</p> <p>PC4. prepare the surface to be waterproofed through the following methods</p> <ul style="list-style-type: none"> • cleaning the surface thoroughly free of loose particles, dirt and oil traces • Mix the materials well in accordance with manufacturing specifications • prime coating • filling holes or depressions using cementitious materials • washing down • hacking of existing RCC surface • chipping/scraping of protrusions • cleansing off the dust • priming or sealing of surfaces • removing sharp edges
Check the materials to be used for waterproofing	<p>To be competent, the individual must be able to:</p> <p>PC5. check the quality of cement and sand for usability</p> <p>PC6. check the consistency of grouting material</p> <p>PC7. check the usability of waterproofing material</p>
Lay out waterproofing course	<p>To be competent, the individual must be able to:</p> <p>PC8. mark and transfer excess waterproofing material at a regular interval in order to maintain proper slope of finished surface in case of horizontal surfaces</p> <p>PC9. prepare waterproofing cement mortar as per specification for different surfaces</p>

	<p>PC10. apply waterproofing cementitious mixture to the prepared surface as specified</p> <p>PC11. finish the surface using appropriate tools as per the required surface finish</p> <p>PC12. protect waterproofed surfaces from any damage</p> <p>PC13. check for further leakage of water</p>
Carry out brick bat coba waterproofing	<p>To be competent, the individual must be able to:</p> <p>PC14. ensure all non-structural gaps are filled prior to laying brick bat courses</p> <p>PC15. prepare cement mortar in an appropriate ratio including addition of waterproofing admixture</p> <p>PC16. spread a mortar of even thickness on the surface</p> <p>PC17. lay brick bat on the prepared mortar ensuring proper placement and uniform gaps between bricks</p> <p>PC18. fill all gaps in brick bat using cement mortar</p> <p>PC19. finish the top surface smooth with cement mortar prepared in specified proportion along with admixtures</p>
Check for line, level and alignment of the structure	<p>To be competent, the individual must be able to:</p> <p>PC20. identify and transfer excess waterproofing material using appropriate tools</p> <p>PC21. check horizontal and vertical alignment using appropriate tools</p> <p>PC22. mark and transfer excess waterproofing material at regular intervals in order to maintain proper slope of finished surface in case of horizontal surface</p>
Knowledge and Understanding (K)	
A. Organisational Context (Knowledge of the company/ organisation and its processes)	<p>The individual on the job must demonstrate knowledge and understanding of:</p> <p>OK1. standard practices for waterproofing work</p> <p>OK2. safety rules and regulations for handling and storing required bricklaying tools, equipment and materials</p> <p>OK3. personal protection including the use of related safety gear and equipment</p> <p>OK4. how to request for tools and materials in accordance with laid down procedures</p> <p>OK5. maintenance of tools and equipment</p>
B. Technical Knowledge	<p>The individual on the job must demonstrate knowledge and understanding of:</p> <p>TK1. types and specification of waterproofing compounds</p> <p>TK2. preparation of the surface before the waterproofing</p> <p>TK3. usage of various waterproofing tools and equipment such as:</p> <ul style="list-style-type: none"> • air compressors, spray equipment and grouting equipment • trowels, rollers and brushes, • angle grinders and shovels • electric drills • knives or cutting blades • hammers, brooms and vacuum cleaner

	<p>TK4. various methods and techniques used to protect waterproofing of the surface from damage in accordance with manufacturing specification</p> <p>TK5. procedure of laying cementitious waterproofing including brick bat coba waterproofing course</p> <p>TK6. checks for water leakages</p>
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	<p>The individual on the job must be able to:</p> <p>CS1. write in English (at least working level) and be able to or have the means to give simple instructions in the local language used at the site</p>
	Reading Skills
	<p>The individual on the job must be able to:</p> <p>CS2. read in English (at least working level)</p> <p>CS3. read sketches provided by the supervisor, if required</p> <p>CS4. read instructions, guidelines, sign boards, safety rules, safety procedures and safety tags</p> <p>CS5. read instructions and identify exit routes and procedures during emergencies</p>
	Oral Communication (Listening and Speaking skills)
	<p>The individual on the job must be able to:</p> <p>CS6. speak in English (at least working level) and be able to or have the means to give simple instructions in the local language used at the site</p> <p>CS7. listen attentively and follow instructions given by the supervisor</p> <p>CS8. orally and effectively communicate with co-workers and subordinates</p>
B. Professional Skills	Decision Making
	<p>The individual on the job must be able to:</p> <p>PS1. decide whether the work place is safe for working</p> <p>PS2. decide whether work is adequately defined for the day, work front is clear and adequate materials and tools are available for performing the work</p>
	Plan and Organise
	<p>The individual on the job must be able to:</p> <p>PS3. plan work and organise required resources in coordination with team members and superiors</p> <p>PS4. prioritise daily works as per the construction project requirements</p>
	Customer Centricity
	<p>The individual on the job must be able to:</p> <p>PS5. complete work as per agreed time schedule and quality</p>
	Problem Solving
<p>The individual on the job must be able to:</p> <p>PS6. rectify the workability of cementitious mortar mix</p> <p>PS7. resolve any conflicts within the team</p>	

	Analytical Thinking
	The individual on the job must be able to: PS8. optimise the use of resources PS9. use resources efficiently PS10. check and mark the position of leakages PS11. minimise wastage of construction materials at the workplace PS12. assess quantity and quality of materials for the day's work PS13. assess the amount of work to be done on a daily basis PS14. reconcile daily material consumption
	Critical Thinking
	The individual on the job must be able to: PS15. evaluate the complexity of the task and seek assistance and support wherever required PS16. bring to the attention of the superiors any requirements for requisite materials and resources PS17. check for quality of scaffolding or working platform against all aspects of safety PS18. bring to the attention of the superiors violation of any safety norms which may lead to accidents in the workplace PS19. analyse resources, work front and raw materials

UNIT 4 [This Unit covers the skills and knowledge required by a General Bricklayer to be proficient in building structures using rubble masonry and artificial stone].

Unit No.	04
Unit Title	Build structures using rubble masonry and artificial stone
Description	This Unit describes the skills and knowledge required to build structures using rubble masonry and artificial stone including; <ul style="list-style-type: none"> • coursed rubble masonry, • un-coursed rubble masonry, • polygonal rubble masonry, • flint rubble masonry and • dry rubble masonry • cobbling • artificial stone
Scope	This Unit covers the following: <ul style="list-style-type: none"> • Carry out preparatory work for rubble masonry • Check the material used for rubble masonry • Lay out coursed and un-coursed rubble masonry with undressed or hammer dressed stones • Carry out pointing in stone masonry • Lay out course of dry rubble masonry • Check for line, level and alignment of the masonry structure
Performance Criteria (PC) based on. the Scope	
Element	Performance Criteria (PC)
Carry out preparatory work for rubble masonry	To be competent, the individual must be able to: <ul style="list-style-type: none"> PC1. ensure that the correct tools and tackles are selected for use in the rubble masonry PC2. roughly estimate amount of materials required to complete a rubble masonry job PC3. ensure that the base/sub-base is prepared properly PC4. ensure proper compaction of base prior to commencement of work PC5. select the required type of site surface finish PC6. prepare the sides, edges, bed of stone to ensure proper bonding of stones PC7. mix mortar for rubble masonry in specified ratio including dry and wet mix PC8. identify and transfer required levels using appropriate tools prior to rubble masonry work
Check the material used for rubble and artificial stone masonry	To be competent, the individual must be able to: <ul style="list-style-type: none"> PC9. check for workability and proportions of cement mortar PC10. check the quality of stones to be used in rubble and artificial masonry PC11. ensure proper soaking of stones prior to laying
Lay out coursed and un-coursed rubble masonry with undressed or hammer dressed stones	To be competent, the individual must be able to: <ul style="list-style-type: none"> PC12. work with both undressed and hammer dressed stones as per the requirement of the construction site PC13. lay stones to build walls of rubble masonry as instructed

	<p>PC14. knock off all projecting corners of the laid stones with joints filled and flushed as per the requirements of the site for the rubble masonry</p> <p>PC15. use large stones at the corners and at jambs to increase the strength of the rubble masonry</p> <p>PC16. ensure proper curing of rubble masonry structure</p>
Carry out pointing in stone masonry	<p>To be competent, the individual must be able to:</p> <p>PC17. perform raking of joints as specified prior to drying of bonding mortar</p> <p>PC18. ensure that joints are cleaned and surface is wet prior to pointing</p> <p>PC19. ensure lime or cement mortar for pointing is prepared as per specification</p> <p>PC20. fill joints with appropriate mortar to obtain specified type of pointing</p> <p>PC21. carry out various types of pointing works as per specification using appropriate tools and techniques</p> <p>PC22. ensure proper curing of pointing</p>
Lay out course of dry rubble masonry	<p>To be competent, the individual must be able to:</p> <p>PC23. lay and fix stones for construction of walls without use of mortar</p> <p>PC24. knock off all projecting corners</p>
Check for line, level and alignment of the masonry structure	<p>To be competent, the individual must be able to:</p> <p>PC25. mark and transfer required levels at a regular interval in order to maintain proper slope of finished surface in case of horizontal surface</p> <p>PC26. check horizontal and vertical alignment using appropriate tools</p>
Knowledge and Understanding (K)	
A. Organisational Context (Knowledge of the company/ organisation and its processes)	<p>The individual on the job must demonstrate knowledge and understanding of:</p> <p>OK1. standard practices for random rubble masonry work</p> <p>OK2. safety rules and regulations for handling and storing required masonry tools, equipment and materials</p> <p>OK3. personal protection including the use of related safety gears and equipment</p> <p>OK4. how to request for tools and materials as per set procedures</p> <p>OK5. maintenance of tools and equipment</p>
B. Technical Knowledge	<p>The individual on the job must demonstrate knowledge and understanding of:</p> <p>TK1. standard specifications for all tools and equipment required for rubble masonry (such as tile cutters and scribes, masonry drill bits, measuring tape/rule, trowels, straight edge, levels, wet saw, scrapers, etc.) along with their care and maintenance</p> <p>TK2. basic principles of measurement</p> <p>TK3. methods of decorative finishes and basic carving work required in the rubble masonry</p> <p>TK4. different types of plasters and mortar requirements for rubble masonry works as per the specification and aesthetic requirements</p>

	<p>TK5. various types of cement paste/adhesives used on the base TK6. various types of stones used in rubble masonry TK7. basic methods of stone work and finishing in rubble masonry TK8. various techniques/procedures for working with undressed and hammer dressed stones used for un-course and course random rubble masonry as per the aesthetic requirements of the site TK9. various types of pointing in stone masonry and their application including:</p> <ul style="list-style-type: none"> • flush pointing • weathered pointing • ribbon pointing <p>TK10. different mortar mixes used for pointing TK11. various pointing and raking tools, techniques and methods of pointing a joint as per specification TK12. reference levels on the wall and their importance</p>
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	<p>The individual on the job must be able to: CS1. write in English (at least working level) and be able to or have the means to give simple instructions in the local language used at the site</p>
	Reading Skills
	<p>The individual on the job must be able to: CS2. read in English (at least working level) CS3. read sketches provided by the supervisor, if required CS4. read instructions, guidelines, sign boards, safety rules, safety procedures and safety tags CS5. read instructions and identify exit routes during emergencies</p>
B. Professional Skills	Oral Communication (Listening and Speaking skills)
	<p>The individual on the job must be able to: CS6. speak in English (at least working level) and be able to or have the means to give simple instructions in the local language used at the site CS7. listen attentively and follow instructions given by the supervisor CS8. orally and effectively communicate with co-workers and subordinates</p>
	Decision Making
	<p>The individual on the job must be able to: PS1. decide whether the work place is safe for working PS2. decide whether work is adequately defined for the day, work front is clear and adequate materials and tools are available for performing the work</p>
	Plan and Organise
	<p>The individual on the job must be able to: PS3. plan work and organise required resources in coordination with team members and superiors PS4. prioritise daily works as per the construction project requirements</p>

	Customer Centricity
	The individual on the job must be able to: PS5. complete work as per agreed time schedule and quality
	Problem Solving
	The individual on the job must be able to: PS6. rectify the workability of cementitious mortar mix PS7. rectify the setting/alignment of masonry structure PS8. resolve any conflicts within the team PS9. inform the superiors in case any corrective action is required during the rubble masonry works
	Analytical Thinking
The individual on the job must be able to: PS10. optimise the use of resources PS.11 ensure correct placement and fixing of stones as per specification PS12. use resources efficiently PS13. minimise wastage of construction materials at the workplace PS14. assess quantity and quality of materials for the day's work PS15. assess the amount of work to be done on a daily basis PS16. reconcile daily material consumption	
Critical Thinking	
The individual on the job must be able to: PS17. evaluate the complexity of the task and seek assistance and support wherever required PS18. bring to the attention of the superiors any requirements for requisite materials and resources PS19. check for quality of scaffolding or working platform against all aspects of safety PS20. bring to the attention of the superiors violation of any safety norms which may lead to accidents in the workplace PS21. analyse resources, work front and raw materials	

UNIT 5 [This Unit covers the skills and knowledge required by a General Bricklayer to be proficient in executing cementitious flooring works].

Unit No.	05
Unit Title	Carry out cementitious and epoxy flooring works
Description	This Unit describes the skills and knowledge required to work on cementitious and epoxy flooring including; <ul style="list-style-type: none"> • Stained concrete • Polished concrete • Granolithic • Terrazzo • Metallic epoxy • Epoxy chip • Standard epoxy • Overlays • Quartz flooring
Scope	This Unit covers the following: <ul style="list-style-type: none"> • Carry out preparatory work prior to cementitious flooring such as diamond grinding, scarifying, shot-blasting, scrubbing and scabbling • Clean and free surfaces of things like dust, oil, paint and other contaminants • Check for line, level and alignment of the flooring • Check the materials to be used for cementitious flooring in case of manual mixing • Check the materials to be used for cementitious flooring in case of machine mixing • Carry out cementitious flooring or vacuum dewatered flooring (VDF)
Performance Criteria (PC) based on the Scope	
Element	Performance Criteria (PC)
Carry out preparatory work prior to cementitious flooring	To be competent, the individual must be able to: PC1. inspect the work area prior to concreting and ensure levelling in case of any undulations observed on the surface prior to application of cementitious flooring PC2. ensure surface is prepared appropriately and report any deviation in slope and alignment in the surface PC3. identify and report any gaps in formwork to avoid leakages PC4. Identify and report any misalignment in formwork/reinforcement and ensure proper cover for reinforcement is provided
Check for line, level and alignment of the flooring	To be competent, the individual must be able to: PC5. mark reference level on the wall and transfer this marking to all floor locations using appropriate tools PC6. mark flooring thickness level and provide dummy level dots at specified intervals to maintain the required slope
Check the materials to be used for	To be competent, the individual must be able to: PC7. check the grade of cement or the type of cementitious material prior to use in case of manual mixing

cementitious flooring in case of manual mixing	<p>PC8. ensure fine aggregates are sieved as per grade requirement</p> <ul style="list-style-type: none"> ensure the specification of the manufactured materials is adequate for the planned works <p>PC9. check that concrete is mixed in appropriate proportions</p>
Check the materials to be used for cementitious flooring in case of machine mixing	<p>To be competent, the individual must be able to:</p> <p>PC10. visually assess the concrete mix for usability and workability</p> <p>PC11. notify superiors about any detrimental qualities of concrete</p> <p>PC12. ensure specified concrete mix is used at specified locations</p> <p>PC13. check that panels prepared are of specified size and type</p>
Carry out cementitious / vacuum dewatered flooring (VDF)	<p>To be competent, the individual must be able to:</p> <p>PC14. level the surface and lay stone soling/boulder soling layer</p> <p>PC15. lay the floor with slope maintained in plain cement concrete (PCC) work above the stone soling</p> <p>PC16. remove excess water from the top layer of wet concrete without removing cement or sand particles using vacuum dewatering machines</p> <p>PC17. use floaters on green concrete surfaces</p> <p>PC18. carry out cementitious flooring in specified panels on cement concrete floors ensuring intactness of rebar and cover</p> <p>PC19. cut grooves on concrete at specified intervals for construction joints</p> <p>PC20. provide expansion joints as per requirement</p> <p>PC21. carry out curing of finished cementitious flooring as per specifications</p> <p>PC22. ensure finished levels have required slope</p>
Knowledge and Understanding (K)	
A. Organisational Context (Knowledge of the company/ organisation and its processes)	<p>The individual on the job must demonstrate knowledge and understanding of:</p> <p>OK1. standard practices for flooring works</p> <p>OK2. safety rules and regulations for handling and storing required flooring tools, equipment and materials</p> <p>OK3. personal protection including the use of related safety gear and equipment</p> <p>OK4. how to request for tools and materials as per set procedures</p> <p>OK5. maintenance of tools and equipment</p>
B. Technical Knowledge	<p>The individual on the job must demonstrate knowledge and understanding of:</p> <p>TK1. how to use tools and specialized tools for cementitious flooring such as:</p> <ul style="list-style-type: none"> vacuum dewatering pump floater machine double beam screen vibrator <p>TK2. process to prepare the base/sub-base by watering and ramming</p> <p>TK3. provide for adequate slope in the base course</p> <p>TK4. how to make reference levels and transfer the markings to all locations where flooring is to be done</p>

	<p>TK5. various types and grades of cement used, effect of water to cement ratio on the quality of floors and types of aggregates to be used</p> <p>TK6. different mix proportions and grades of concrete</p> <p>TK7. sequence of cementitious floor pouring and placing</p> <p>TK8. manual mixing of concrete and nominal mix proportions</p> <p>TK9. cover to reinforcement with respect to size of reinforcement</p> <p>TK10. how to pour cementitious flooring in alternate panels</p> <p>TK11. how to avoid shrinkage cracks in cementitious flooring</p> <p>TK12. various admixtures used in cementitious flooring</p> <p>TK13. different types of vibrators, their influence area and use</p> <p>TK14. construction and expansion joints</p> <p>TK15. cutting tools for providing joints</p> <p>TK16. final trowelling process before the cementitious flooring is hardened</p> <p>TK17. excess water removal process using vacuum dewatered machine</p> <p>TK18. use of screed vibrator</p> <p>TK19. hardener usage along with floater machine (if required) at the time of finishing the floor surface to increase abrasion resistance of the floor</p> <p>TK20. how to provide space for narrow passage for operating float vibrator along a wall</p>
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	<p>The individual on the job must be able to:</p> <p>CS1. write in English (at least working level) and be able to or have the means to give simple instructions in the local language used at the site</p>
	Reading Skills
	<p>The individual on the job must be able to:</p> <p>CS2. read in English (at least working level)</p> <p>CS3. read sketches provided by the supervisor, if required</p> <p>CS4. read instructions, guidelines, sign boards, safety rules and safety tags</p> <p>CS5. read instructions and identify exit routes during emergencies</p>
B. Professional Skills	Oral Communication (Listening and Speaking skills)
	<p>The individual on the job must be able to:</p> <p>CS6. speak in English (at least working level) and be able to or have the means to give simple instructions in the local language used at the site</p> <p>CS7. listen attentively and follow instructions given by the supervisor</p> <p>CS8. orally and effectively communicate with co-workers and subordinates</p>
B. Professional Skills	Decision Making
	<p>The individual on the job must be able to:</p> <p>PS1. decide whether the work place is safe for working</p> <p>PS2. decide whether work front is clear and adequate materials and tools are available for performing the work</p>

	Plan and Organise
	The individual on the job must be able to: PS3. plan work and organise required resources in coordination with team members and superiors PS4. prioritise daily works as per the construction project requirements
	Customer Centricity
	The individual on the job must be able to: PS5. complete work as per agreed time schedule and quality
	Problem Solving
	The individual on the job must be able to: PS6. resolve any conflicts within the team PS7. bring any noticeable issues faced (related to the flooring) to the attention of the superiors in a timely manner PS8. assess quantity and quality of materials for the day's work PS9. check quality of scaffolding/working platform against all aspects of safety PS10. dispose of construction debris appropriately and keep the workplace safe and tidy for working
	Analytical Thinking
	The individual on the job must be able to: PS11. optimise the use of resources PS12. use resources efficiently PS13. minimise wastage of construction materials at the workplace PS14. assess the amount of work to be done on a daily basis PS15. reconcile daily material consumption
Critical Thinking	
The individual on the job must be able to: PS16. evaluate the complexity of the task and seek assistance and support wherever required PS17. identify and bring to the attention of the superiors any requirements for requisite materials and resources PS18. bring to the attention of the superiors violation of any safety norms which may lead to accidents in the workplace	

UNIT 6 [This Unit covers the skills and knowledge required by a General Bricklayer to work effectively within a team to achieve the desired results].

Unit No.	06
Unit Title	Work effectively in a team to deliver desired results at the workplace
Description	This Unit describes the skills and knowledge required to work effectively within a team to achieve the desired results
Scope	This Unit covers the following: <ul style="list-style-type: none"> • Interact and communicate effectively with co-workers, superiors and subordinates across different teams • Support co-workers, superiors and sub-ordinates within the team and across interfacing teams to ensure effective execution of assigned tasks
Performance Criteria (PC) based on the Scope	
Element	Performance Criteria (PC)
Interact and communicate in an effective and conclusive manner	To be competent, the individual must be able to: PC1. pass on work related information/requirements clearly to team members PC2. inform co-workers and superiors about any kind of deviations from work related requirements and procedures PC3. address work related problems effectively, and appropriately report to the immediate supervisor, if necessary PC4. receive instructions from superiors, execute them and respond effectively PC5. communicate to team members/subordinates on the appropriate work technique or method PC6. seek clarification and advice whenever necessary
Support co-workers to ensure effective execution of assigned tasks	To be competent, the individual must be able to: PC7. hand over the required materials, tools, equipment and work fronts timely to interfacing teams in line with company procedure PC8. work together with co-workers in a synchronised manner
Knowledge and Understanding (K)	
A. Organisational Context (Knowledge of the company/ organisation and its processes)	The individual on the job must demonstrate knowledge and understanding of: OK1. take ownership of roles and responsibilities OK2. importance of effective communication and establishing strong working relationships with co-workers OK3. risks associated with a breakdown in teamwork in terms of effects on project outcomes, timelines, safety at the construction site, etc. OK4. different modes of communication and their appropriate usage OK5. importance of creating a healthy and cooperative work environment within and among teams

<p>B. Technical Knowledge</p>	<p>The individual on the job must demonstrate knowledge and understanding of:</p> <p>TK1. different activities within his/her work area where interaction with other workers is required</p> <p>TK2. applicable techniques of work, properties of materials used, tools used, safety standards that co-workers might need as per the requirement</p> <p>TK3. importance of proper and effective communication and the expected adverse effects that can result from failure relating to quality, timelines, safety and risks at the construction site</p> <p>TK4. importance and need to support co-workers facing problems for smooth workflow</p>
<p>Skills (S)</p>	
<p>A. Core Skills/ Generic Skills</p>	<p>Writing Skills</p>
	<p>The individual on the job must be able to:</p> <p>CS1. write in English (at least working level) and be able to or have the means to give simple instructions in the local language used at the site</p>
	<p>Reading Skills</p>
	<p>The individual on the job must be able to:</p> <p>CS2. read in English (at least working level)</p> <p>CS3. read communications from team members regarding work completed, materials and tools used, as well as support required</p>
	<p>Oral Communication (Listening and Speaking skills)</p>
	<p>The individual on the job must be able to:</p> <p>CS4. speak in English (at least working level) and be able to or have the means to give simple instructions in the local language used at the site</p> <p>CS5. listen attentively and follow instructions/communications shared by superiors and co-workers</p> <p>CS6. orally communicate with co-workers regarding support required to successfully complete work</p>
<p>B. Professional Skills</p>	<p>Decision Making</p>
	<p>The individual on the job must be able to:</p> <p>PS1. decide on what information is to be shared with co-workers within the team or from interfacing gang of workers</p>
	<p>Plan and Organise</p>
	<p>The individual on the job must be able to:</p> <p>PS2. plan work and organise required resources in coordination with team members and superiors</p>
	<p>Customer Centricity</p>
	<p>The individual on the job must be able to:</p> <p>PS3. complete all assigned tasks in coordination with team members</p>
<p>Problem Solving</p>	
<p>The individual on the job must be able to:</p> <p>PS4. take initiative in resolving issues among co-workers or report the same to superiors, if necessary</p>	

	Analytical Thinking
	The individual on the job must be able to: PS5. employ best ways of coordination among team members PS6. communicate with co-workers taking into account their educational/social background
	Critical Thinking
	The individual on the job must be able to: PS7. evaluate the complexity of the task and determine if any guidance is required from superiors

UNIT 7 [This Unit covers the skills and knowledge required by a General Bricklayer to plan and organise work in order to meet expected quality within the established time frame].

Unit No.	07
Unit Title	Plan and organise work to meet expected outcomes
Description	This Unit describes the skills and knowledge required to plan and organise own work in order to meet expected outcome
Scope	This Unit covers the following: <ul style="list-style-type: none"> • Prioritise work activities to achieve desired results • Organise resources prior to commencement of work
Performance Criteria (PC) based on the Scope	
Element	Performance Criteria (PC)
Prioritise work activities to achieve desired results	To be competent, the individual must be able to: PC1. understand clearly the targets and timelines set by superiors PC2. plan activities as per schedule and sequence PC3. provide guidance to subordinates to obtain desired outcome PC4. plan housekeeping activities prior to and post completion of work
Organise resources prior to commencement of work	To be competent, the individual must be able to: PC5. list and arrange required resources prior to commencement of work PC6. select and employ correct tools and equipment for successful completion of desired work PC7. complete the work with the allocated resources PC8. engage the allocated manpower in an appropriate manner PC9. use resources in an optimum manner to avoid wastage PC10. employ tools and equipment with care to avoid damage PC11. organise work output, materials and tools used PC12. ensure that work processes adopted are in line with the specified standards and instructions
Knowledge and Understanding (K)	
A. Organisational Context (Knowledge of the company/ organisation and its processes)	The individual on the job must demonstrate knowledge and understanding of: OK1. importance of proper housekeeping OK2. policies, procedures and work targets set by superiors OK3. roles and responsibilities in executing own work for and that of subordinates
B. Technical Knowledge	The individual on the job must demonstrate knowledge and understanding of: TK1. planning and organising bricklaying work TK2. standard work practices to be adopted for the assigned task TK3. how to use available resources in a judicious and appropriate manner to minimise wastage or damage

Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	The individual on the job must be able to: CS1. write in English (at least working level) and be able to or have the means to give simple instructions in the local language used at the site CS2. list down the assigned works and targets
	Reading Skills
	The individual on the job must be able to: CS3. read in English (at least working level) CS4. read communications from co-workers, superiors and notices from other departments as per job position/level requirements
B. Professional Skills	Oral Communication (Listening and Speaking skills)
	The individual on the job must be able to: CS5. speak in English (at least working level) and be able to or have the means to give simple instructions in the local language used at the site CS6. listen attentively and follow communications shared by co-workers regarding standard work processes, resources available, timelines, etc. CS7. communicate effectively with co-workers and subordinates
	Decision Making
	The individual on the job must be able to: PS1. decide on what sequence is to be adopted for execution of bricklaying work
B. Professional Skills	Plan and Organise
	The individual on the job must be able to: PS2. plan and organise the materials, tools and equipment required to execute the bricklaying work
	Customer Centricity
	The individual on the job must be able to: PS3. complete all assigned tasks with proper planning and organisation
	Problem Solving
	The individual on the job must be able to: PS4. arrange for or seek help to arrange for materials, tools and equipment in case of a shortfall PS5. Identify and rectify any problems associated with the planning and sequence of bricklaying work activities
	Analytical Thinking
	The individual on the job must be able to: PS6. analyse areas of work which could result in a delay of work, wastage of material or damage to tools and equipment
Critical Thinking	
The individual on the job must be able to: PS7. evaluate potential problems and solutions to minimise avoidable delays and wastages at the construction site	

UNIT 8 [This Unit covers the skills and knowledge required by a General Bricklayer to work according to personal health, safety and environmental rules and protocols at the construction site].

Unit No.	08
Unit Title	Work according to personal health, safety and environment rules and protocols at the construction site
Description	This Unit describes the skills and knowledge required to work according to personal health, safety and environmental rules and protocols at the construction site
Scope	This Unit covers the following: <ul style="list-style-type: none"> • Follow safety norms as defined by the organisation • Adopt healthy and safe work practices • Implement good housekeeping and environment protection process and activities
Performance Criteria (PC) based on the Scope	
Element	Performance Criteria (PC)
Follow safety norms as defined by the organisation	To be competent, the individual must be able to: PC1. identify and report any hazards, risks or breaches in site safety to the appropriate authority PC2. follow emergency and evacuation procedures in case of accidents, fire incidents and natural calamities PC3. follow recommended safe practices in handling construction materials, including chemical and other hazardous materials, whenever applicable PC4. participate in safety awareness programs like Tool Box Talks, safety demonstrations and mock drills conducted at the site PC5. identify and report near misses, unsafe conditions and acts
Adopt healthy and safe work practices	To be competent, the individual must be able to: PC6. correctly use appropriate Personal Protective Equipment (PPE) as per work requirements including: <ul style="list-style-type: none"> • head protection; • ear protection; • fall protection; • foot protection; • face and eye protection; • hand and body protection; and • respiratory protection (if required) PC7. handle all work related tools, materials and equipment safely PC8. follow safe disposal of waste, harmful and hazardous materials as per the environmental, health and safety guidelines PC9. properly install and apply all safety equipment as instructed PC10. follow safety protocol and practices as laid down by the environmental, health and safety department/team at the construction site
Implement good housekeeping practices	To be competent, the individual must be able to: PC11. collect and deposit construction waste into identified containers before disposal, clearly labelling and separating containers with toxic or hazardous wastes

	PC12. apply ergonomic principles wherever required
Knowledge and Understanding (K)	
A. Organisational Context (Knowledge of the company/ organisation and its processes)	The individual on the job must demonstrate knowledge and understanding of: OK1. reporting procedures in cases of breaches or hazards to site safety, accidents and emergency situations as per organisational guidelines OK2. types of safety hazards at construction sites OK3. basic work ergonomic principles
B. Technical Knowledge	The individual on the job must demonstrate knowledge and understanding of: TK1. the procedure for responding to accidents and other emergencies at the construction site TK2. appropriate personal protective equipment to be used based on prevailing working conditions TK3. importance of handling tools, equipment and materials appropriately to avoid damage TK4. health and environmental effects of various types of construction materials TK5. various environmental protection methods TK6. storage of waste in appropriate locations, such as: <ul style="list-style-type: none"> • non-combustible scrap materials and debris; • combustible scrap materials and debris; • general construction waste and trash (non-toxic and non-hazardous); • any other hazardous wastes; and • any other flammable wastes. TK7. how to use hazardous materials in a safe and appropriate manner TK8. safe usage of tools and equipment TK9. housekeeping activities relevant to a particular task
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	The individual on the job must be able to: CS1. write in English (at least working level) and be able to or have the means to give simple instructions in the local language used at the site CS2. fill in safety related forms for near misses, unsafe conditions and safety enhancement suggestions
	Reading Skills
	The individual on the job must be able to: CS3. read in English (at least working level) CS4. read sign and notice boards relevant to safety
	Oral Communication (Listening and Speaking skills)
The individual on the job must be able to: CS5. speak in English (at least working level) and be able to or have the means to give simple instructions in the local language used at the site	

	<p>CS6. listen attentively to instructions/communications shared by site's environmental, health and safety department/team and superiors regarding site safety</p> <p>CS7. communicate site conditions, hazards, accidents, etc.</p>
B. Professional Skills	Decision Making
	The individual on the job must be able to: PS1. avoid creating unsafe working conditions for others PS2. keep the workplace clean and tidy
	Plan and Organise
	The individual on the job must be able to: PS3. plan and organise the safety materials, PPE, tools and equipment required to execute the work
	Customer Centricity
	The individual on the job must be able to: PS4. complete all assigned tasks safely, taking into account the safety of the end users
	Problem Solving
	The individual on the job must be able to: PS5. identify and rectify or report safety risks that may affect one's health, safety and environment and that of others working in the vicinity
	Analytical Thinking
	The individual on the job must be able to: PS6. assess and analyse areas which may affect health, safety and environment protocol set at the construction site
Critical Thinking	
The individual on the job must be able to: PS7. behave and conduct him/herself in a safe manner PS8. respond to emergencies as soon as it is safe to do so	

5. EQUIPMENT, TOOLS AND CONSUMABLE MATERIALS

These include, but not limited to:

- Personal Protective Equipment (hardhat, work suit, safety boots and goggles),
- Materials such as Blocks, Bricks, Tiles, Pavers, Binders (e.g. Cement), Sand (building sand, river sand, etc.), Quarry dust, Gravel, Aggregates/Crushed stones, Water, Anti-termite chemicals, etc,
- Steel tape,
- Measuring tape,
- Plumb bob,
- Spirit level,
- Builders' square,
- Straight edge,
- Mortar pan,
- Trowels,
- Chisels,
- Bricklayer's hammer,
- Brooms,
- Brushes,
- Buckets and Sponges,
- Jointer,
- Shovel and Pickaxe,
- Hoe,
- Spades,
- Earth rammer,
- Crow bar,
- Sledgehammer,
- Scaffolds,
- Climbing ladders,
- Pieces of timber,
- Concrete mixer,
- Anti-dump plastics,
- Conforce/brick force wires,
- Reinforcement steel bars, etc.

6. DILEMMAS/CHALLENGES AND COMPLEXITIES FOR A JOB HOLDER

Dilemmas associated with the job of General Bricklaying include: exposure to electrical power supply and high voltage, working around and with machinery having moving parts, working in dangerous areas with likelihood of sharp or falling materials, working in confined spaces and at heights, working in extreme weather such as hot and cold conditions, working in noisy, wet and dusty environments, exposure to dust, odours and chemicals, lifting/pulling/pushing relatively heavy materials, long working hours, pressure from clients, supervisors and colleagues, pressure from government regulators, etc.

6.1 Alternative Choices (Solutions) to Dilemmas and Complexities

Solutions to dilemmas include wearing protective clothing and ensuring their availability and use by assistants and helpers, exercising regularly to maintain physical fitness, practicing proper work ergonomics, participating in workplace safety sensitisation and awareness meetings/training sessions, adhering to company's safety and standard operating procedures at all times, consulting extensively within and outside one's department/team on work related issues, delegating tasks whenever necessary, etc.

7. WORKING CONDITIONS/ENVIRONMENT

Working conditions include indoor and outdoor work environments, remote/rural areas, confined spaces, seasonal heat and cold or adverse weather conditions, climbing heights, stand/walkabout for long hours, lifting objects, working in areas that are noisy and dusty, etc.

8. PARTIES INVOLVED/INTERACTING WITH THE JOB HOLDER OR TRAINEE

8.1 Internal/Within the Organisation

Supervisors/superiors, trainers, safety team, other colleagues, etc.

8.2 External/Outside the Organisation

Government regulators, trainers, clients, suppliers of equipment/tools/consumables, fellow General Bricklayers from other companies, labour unions/occupational health and safety associations, etc.

9. PHYSICAL DEMANDS ON THE BODY

- Physique to sustain strenuous conditions such as climbing heights;
- Be able to walkabout and stand for long periods of time;
- Bend, stretch, twist, or reach out;
- Be able to lift, carry, push and pull heavy objects;
- Be able to use fingers, hands and feet with ease to complete the assigned task (dexterity), etc.

ANNEX A

Criteria for Assessments based on this NOS

A.1 Guidelines for Assessment

A.1.1 Criteria for assessment for curricula and learning programmes based on this NOS will be created by curricula and programmes developers. Each Performance Criteria (PC) will be assigned marks proportional to its importance in the NOS. Curricula and programmes developers will also lay down proportion of marks for theory and practical skills for each performance criteria, giving more weight to practical skills.

There shall be allocated the 'Total Mark', which will be the sum of all marks in each Unit, distributed across the number of PCs in that particular Unit. The 'out of' mark will be the mark allocated to each PC, which will be shared between theory and skills practical assessments.

A.1.2 Individual awarding/assessment bodies or institutions and other users of the NOS will create unique question papers for the theory part and evaluations for skill practical part for their respective candidates.

ANNEX B NOS Version Control

This Annex gives details necessary for the tracking of the NOS versions based on the number of revisions.

NOS Code	NOS. GB.01		
ZQF Level	4	Version Number	01
Sector	Construction	Date of Approval	February 2021
Sub Sector	Infrastructure Construction	Date of Last Review	N/A
Occupation	Bricklaying	Date of Next Review	March 2026

REGISTERED OFFICE

Zambia Qualifications Authority
Ground Floor, Finsbury Park
P.O Box 51103
Lusaka,Zambia

Tel: +260 211 843050/ 843053

Mobile: + 260 963 922 730/ 0956 037 185 / 0972 559 301

Email: info@zaqa.gov.zm

Website: www.zaqa.gov.zm